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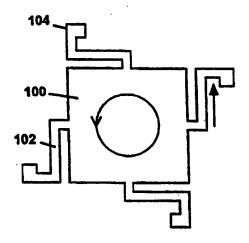
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT

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(21) International Application Number: PCT/US (22) International Filing Date: 1 April 1999 (22) International Filing Date: 1 April 1999 (23) Priority Data: 09/056,975 8 April 1998 (08.04.98) (63) Related by Continuation (CON) or Continuation-i (CIP) to Earlier Application US 09/056,9 Filed on 8 April 1998 (27) Applicant (for all designated States except US): 1 INC. [US/US]; Suite 501, 354 Congress Street, Boto 02110–1237 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): MILES, Mark, W. Suite 501, 354 Congress Street, Boston, MA 02 (US). (74) Agent: FEIGENBAUM, David, L.; Fish & Richard 225 Franklin Street, Boston, MA 02110–2804 (US)	n-Part 75 (CO) (08.04.9) ETALO ston, M	Published With international search report. Before the expiration of the time limit for amending the claim and to be republished in the event of the receipt of amendments (88) Date of publication of the international search report: 29 December 1999 (29.12.99 N) N, IA

(54) Title: INTERFEROMETRIC MODULATION OF RADIATION

(57) Abstract

The invention features an interferometric modulator comprising a cavity defined by two walls. At least two arms connect the two walls to permit motion of the walls relative to each other. The two arms are configured and attached to a first one of the walls in a manner that enables mechanical stress in the first wall to be relieved by motion of the first wall essentially within the plane of the first wall.



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Internatic Application No PCT/US 99/07271

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A CLASSIF	ICATION OF SUBJECT MATTER G02B26/02			
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B. FIELDS	SEARCHED cumentation searched (classification system followed by classification	symbols)		
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Documentati	on searched other than minimum documentation to the extent that suc	h documents are incli	ided in the fields searched	
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C. DOCUME	ENTS CONSIDERED TO BE RELEVANT			
Category °	Citation of document, with indication, where appropriate, of the relev	ant passages	Relevant to claim No.	
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A	page 33, line 20 -page 34, line 15; figure 14			
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X Fur	ther documents are listed in the continuation of box C.	X Patent family	y members are listed in annex.	
° Special o	etegories of cited documents :	"T" later document pu	ublished after the International filing date and not in conflict with the application but	
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Date of the	e actual completion of the international search	Date of mailing o	of the international search report	
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	European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tet. (+31-70) 340-2040, Tx. 31 651 epo nl,	SCHEU	. M	
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Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT	
egary * Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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GOOSSEN K W ET AL: "SILICON MODULATOR BASED ON MECHANICALLY-ACTIVE ANTI-REFLECTION LAYER WITH 1 MBIT/SEC CAPABILITY FOR FIBER-IN-THE-LOOP APPLICATIONS" IEEE PHOTONICS TECHNOLOGY LETTERS, vol. 6, no. 9, 1 September 1994 (1994-09-01), pages 1119-1121, XP000468079 ISSN: 1041-1135 the whole document	1-7, 9-11,15
EP 0 667 548 A (AT & T CORP) 16 August 1995 (1995-08-16) column 3, line 12 - line 35 column 4, line 54 -column 6, line 30; figure 2	1-7, 9-11,15

International application No. PCT/US 99/07271

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of Irst sheet)
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Ctaims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-15,23,24
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-15,23,24

An interferometric modulator comprising a cavity defined by two walls wherein the first wall is movable relative to the second wall and within the plane of the first wall

2. Claims: 16-18

Interferometric modulator comprising three walls and control circuitry for driving at least one of three walls

3. Claims: 19-20

an interference modulator comprising spacers mounted to form part of one of the walls

4. Claims: 21,22,25

Interference modulator comprising means to control the response time of the modulator

5. Claim: 26

Interferomtric modulator comprising a charge deposition mitigating device

6. Claims: 27-32

An interferometric modulator, comprising walls and a support and at least one of the walls or the support comprising at least two materials

7. Claims: 33-38,44-48

A method of etching and patterning a microelectromechanical structure

8. Claims: 39-43

a method of making arrays of microelectromechanical structure on a production line

intermation on patent family members

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